



# Critical Aquifer Recharge Area Draft Guidance

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April 15, 2021

# Meet Your Presenter



Laurie Morgan began her career as a hazardous waste inspector in California, followed by a position as an Engineering Geologist with the California Regional Water Quality Control Board, Los Angeles.

She inspected businesses for potential contamination sources in the San Fernando Superfund area and oversaw soil and groundwater investigations.

Laurie has worked for the Washington State Department of Ecology for 29 years, first as the well construction coordinator for the Southwest Region, then as a hydrogeologist for the Water Quality Program, where she is lead staff for the Groundwater Quality Standards.

She has worked on aquifer vulnerability, pesticide risk modeling, regulatory issues with Large Onsite Sewage Systems and Onsite Sewage Systems, wrote the Critical Aquifer Recharge Area Guidance in 2005, and substantially revised the guidance in 2021. Laurie has reviewed and comment on Critical Aquifer Recharge ordinances as well.

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- 1 Purpose of Critical Aquifer Recharge Areas
- 2 Why Ecology is revising the guidance
- 3 Timeline of example GMA changes
- 4 How to comment
- 5 Overview of the draft guidance with highlights
- 6 Q & A

# Goal of establishing Critical Aquifer Recharge Areas

- Protect the functions and values of a community's drinking water by
  - Preventing pollution and
  - Maintaining supply.

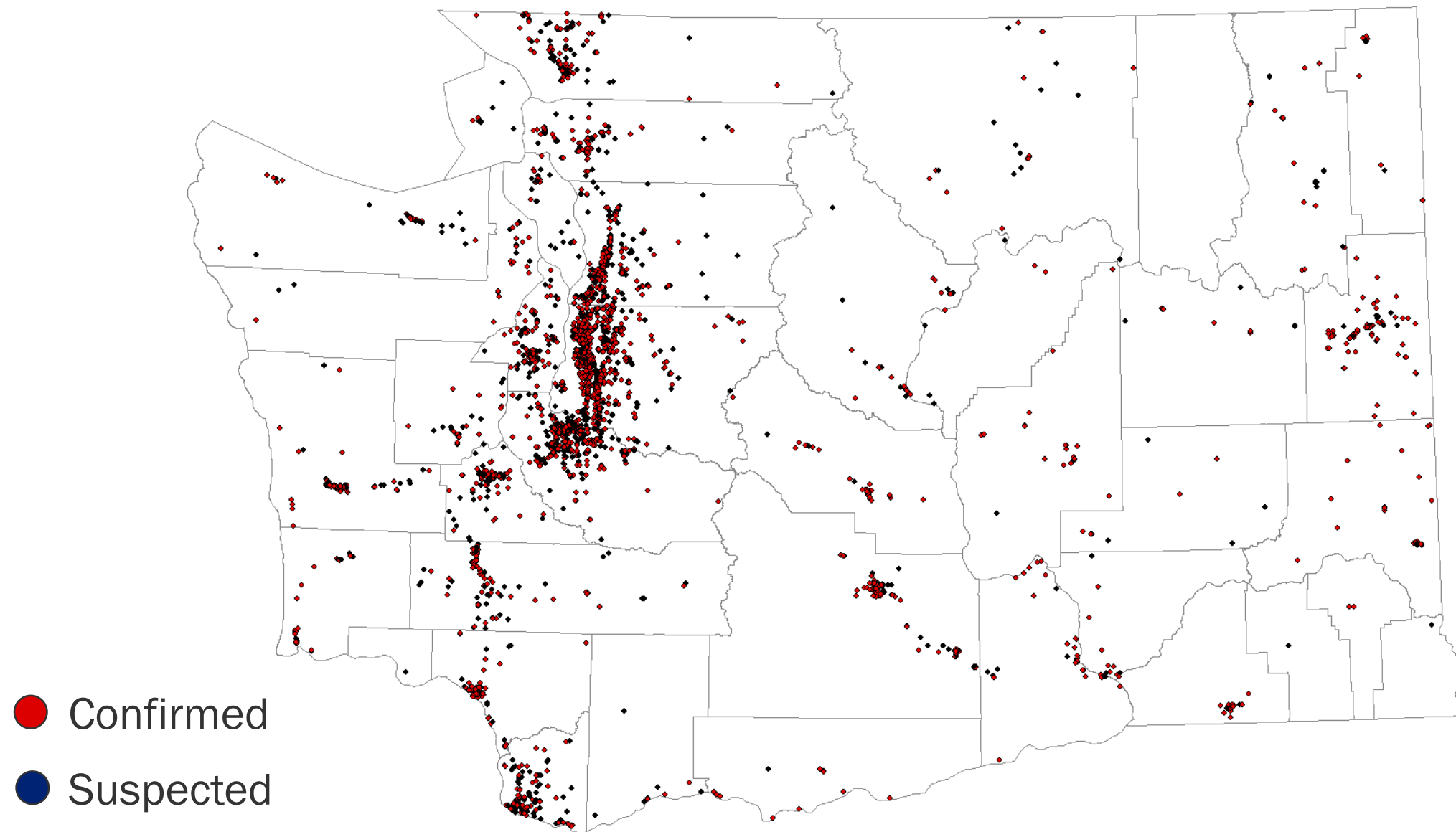
Drinking Water that is clean, safe, and available



# Confirmed Groundwater Contamination in an Industrial Area

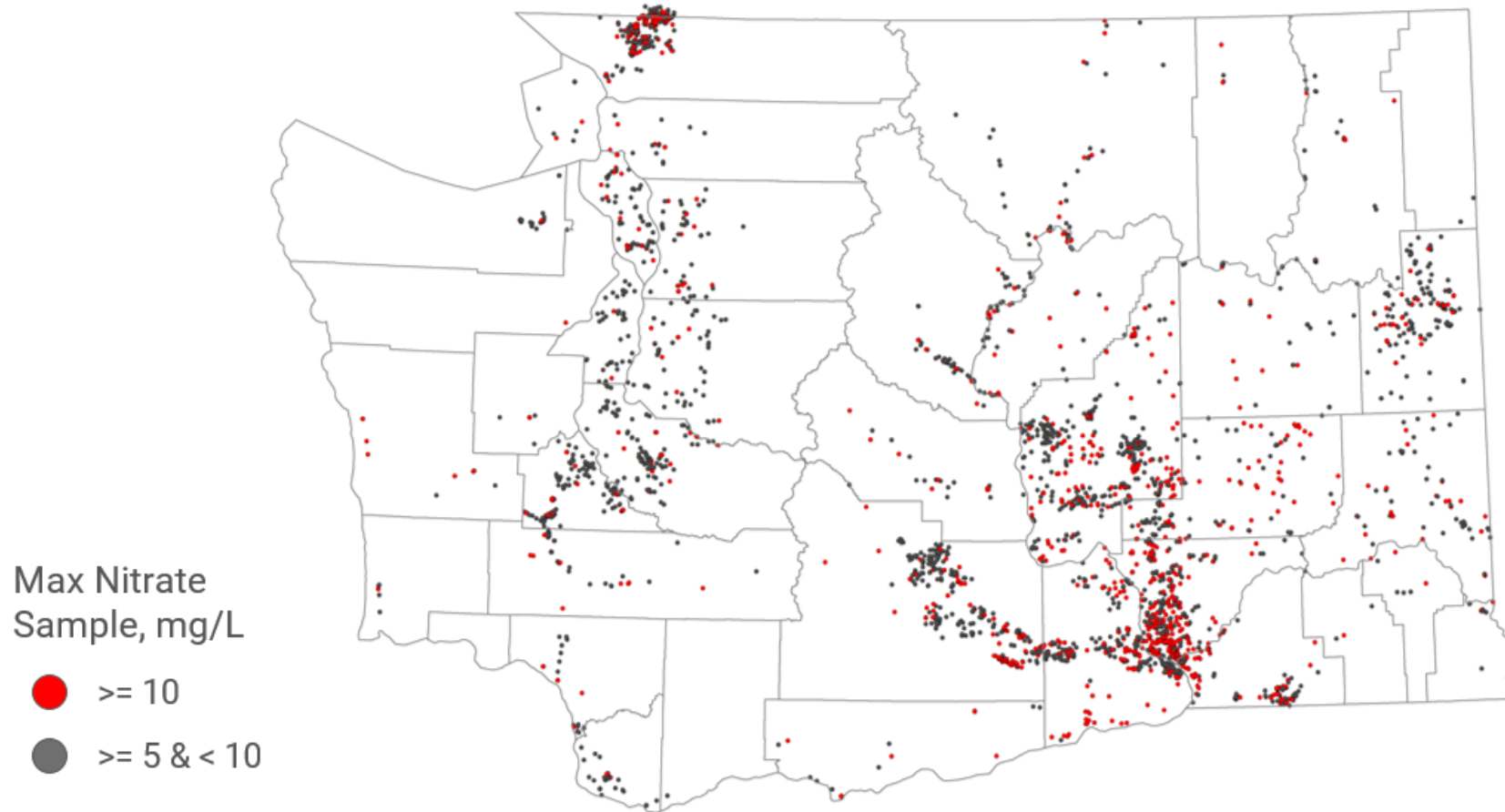


# Confirmed & Suspected Groundwater Contamination Toxic Cleanup Sites (Appendix B)

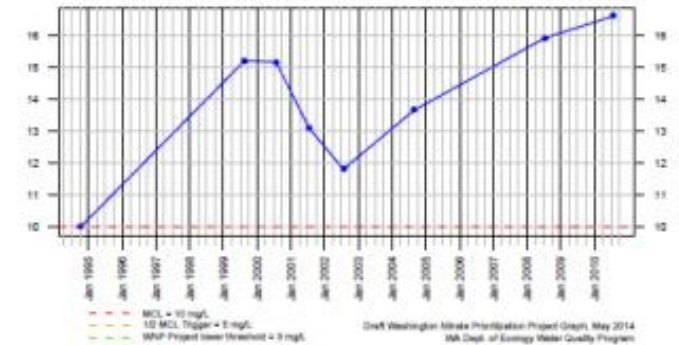


# Monitoring for Nitrates in Groundwater

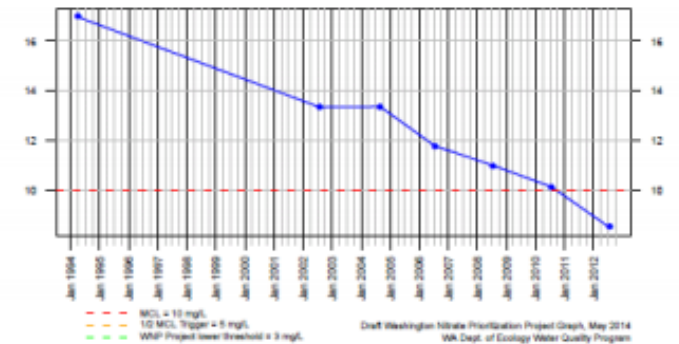
Washington Nitrate Project Wells with Maximum Nitrate Sample  $\geq 5$  mg/L



Well Name: 10N/29E-07R01 PN84  
USGS Well ID: 462141119130501 Well Depth (ft): 72



Well Name: 11N/29E-06D01 ON10  
USGS Well ID: 462824119140801 Well Depth (ft): 73



Washington Nitrate Prioritization Project (Morgan, 2016)

# Groundwater Contamination in the News

Chehalis Superfund Site Deleted From EPA's National Priority List | The Daily Chronicle (chonline.com) October 7, 2020

"After the company closed in 1986, a major flood **tipped over tanks full of those chemicals**, contaminating the groundwater and soil. Beyond the company's 16 acres of property, the contamination also leached into **25 to 30 other residential parcels**, according to the EPA."

Cleanup options aired for Freeman grain facility  
Spokane Journal of Business January 28, 2021

"...Ecology is seeking public input .. on proposed **multimillion-dollar plans to clean up** contamination at the grain elevator in the Freeman area, about 13 miles south of Spokane Valley.

... the plume of carbon tetrachloride spanning a half-mile underground originates from a seasonally active grain-handling facility ...

The contamination was discovered in the groundwater beneath the Freeman School District, which includes an elementary school, a middle school, and a high school.

Additionally, testing found contamination in the wells of three households near the grain-handling facility.

# Why we are revising

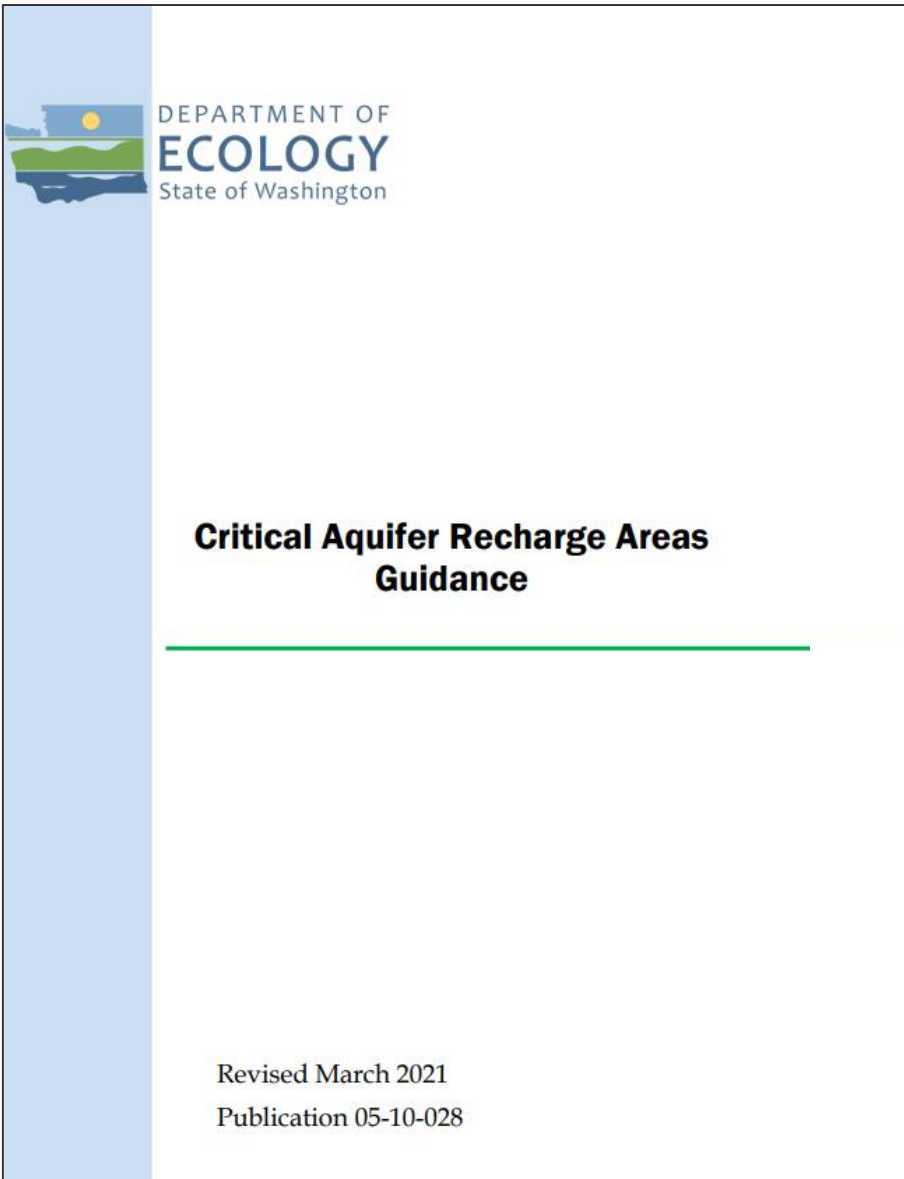
- Last revision was 2005
- Many changes in GMA laws and rules
- Update resource links and references to websites and publications
- Improve the guidance



# Change

Many legislative changes and rule amendments –  
Here are a few that impact critical aquifer recharge  
areas.





# How to Comment

- Comment period ends May 7, 2021 (11:59 PM)
- [eComments online](#) (preferred)
- Or by mail (postmarked by May 7, 2021):  
Laurie Morgan  
Water Quality Program  
Washington State Department of Ecology  
PO Box 47600  
Olympia, WA 98504-7600

[Critical aquifer recharge areas - Washington State Department of Ecology](#) for the web page

[DRAFT - Draft - 2021 Critical Aquifer Recharge Areas: Guidance Document \(wa.gov\)](#) to go to the draft

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Important links

- Critical Areas Handbook - Department of Commerce [Critical Areas web page](#)
- [Washington State Conservation Commission VSP](#)
- [The Growth Management Hearings Board](#)



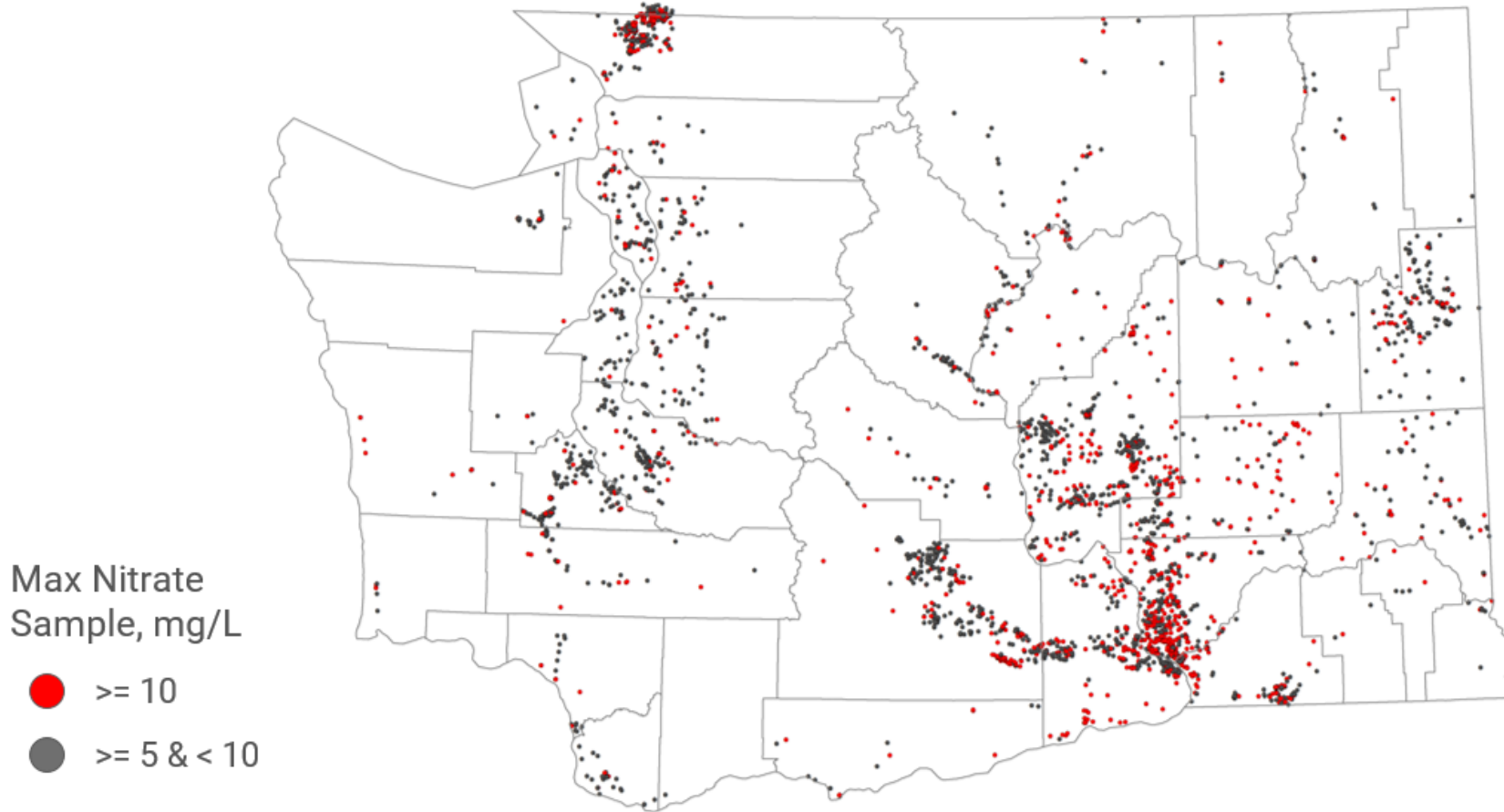
# Voluntary Stewardship Program

- Intent – Provide a voluntary means to protect critical areas in ag lands in VSP opt-in counties.
- Adopted into the Growth Management Act in 2011.
- Administered by the Washington State Conservation Commission
- Other state agencies provide technical support, including Ecology.
- There are challenges with making this work for Critical Aquifer Recharge Areas and prevention of contamination of groundwater from agricultural sources.

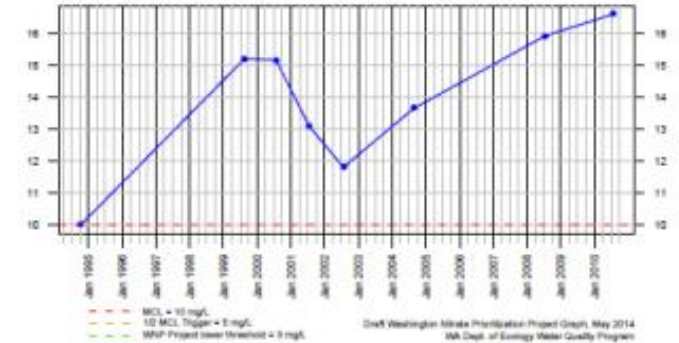


# Monitoring for Nitrates in Groundwater

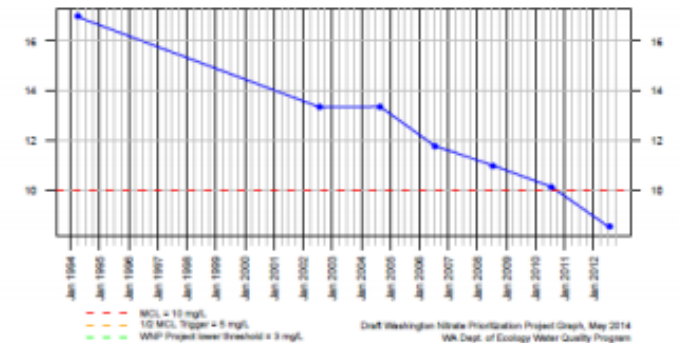
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Washington Nitrate Prioritization Project (Morgan, 2016)

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Section 5 is updated – Especially “Availability” of Best Available Science.

# Availability of BAS

- Growth Management Hearings Board
  - The best available science is science that is presently available as well as practically and economically feasible.
  - The “best available science” requirement includes the word “available” as an indicator that a jurisdiction is not required to sponsor independent research but may rely on competent science that is provided from other sources . . .”
- See also Chapter 365-196-050 WAC Regional and Local Variations for important distinctions related to availability of best available science with respect to smaller jurisdictions.
- The GMA recognizes the variability of population and available resources across the state.



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Section 6 is greatly expanded

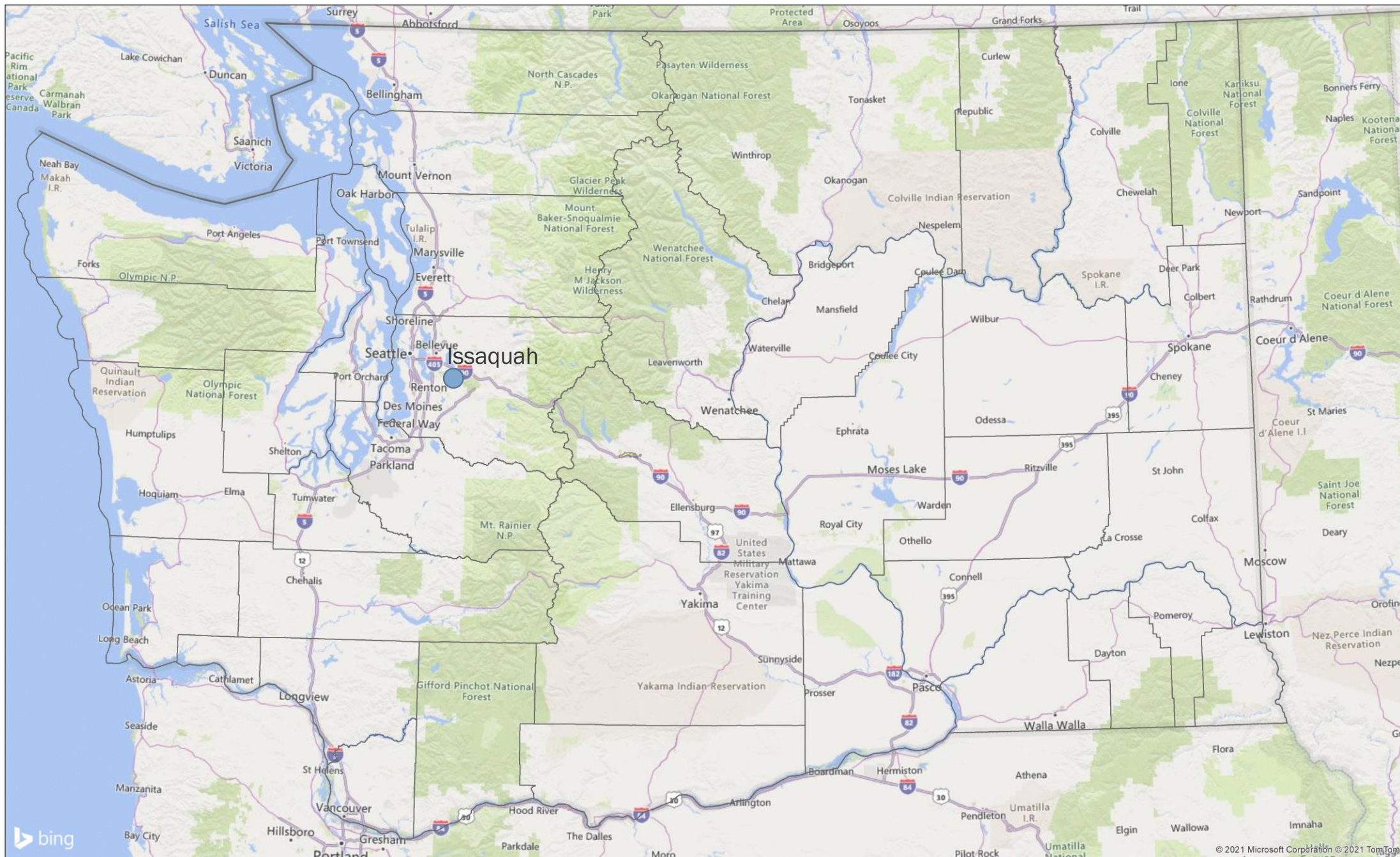
Sections 7 & 8 are updated

Sections 9, 10, and 11 are new



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Special thanks to Julie Wartes, City of Issaquah, for Appendix A – Focus on Implementation



# Issaquah – Program Integration & Implementation

Integration of pollution prevention goals enables programs to make use of shared resources for administration, funding, information, inspections, and public outreach and education.

- Spill Response
- Illicit Discharge Investigation
- Hazardous Materials Management Plans
- Hazardous Materials Management Inventories
- Pollution Prevention Technical Assistance
- Fats Oils and Grease management review
- Septic Inspection Verification
- Private Storm System Inspections
- NPDES Storm System Inspections
- Ambient Water Quality Sampling

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Ecology welcomes  
comments during  
the current  
comment period  
on this section too!

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State of Washington

# Thank You!

# Questions?

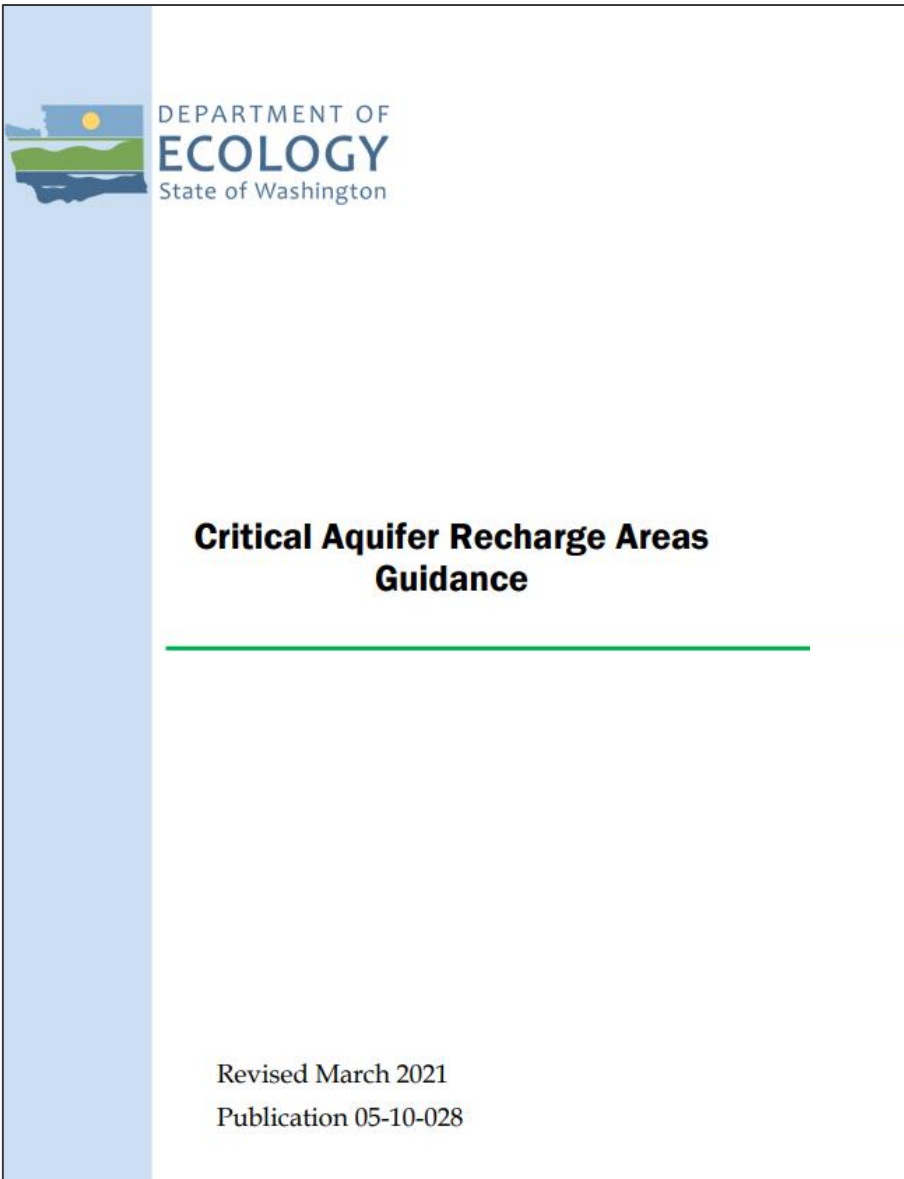
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(360) 407-6483 (Please leave a message and I will call you back)



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State of Washington



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